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MDI-4QF LCD

MASTITIS ANALYZER

CONVENIENCE
DURABILITY
LONGEVITY
RELIABILITY

IDENTIFICATION

and

INSTRUCTION MANUAL

(ENG)

MANUFACTURING COMPANY INFORMATION:

Title
Smart Veterinary Group
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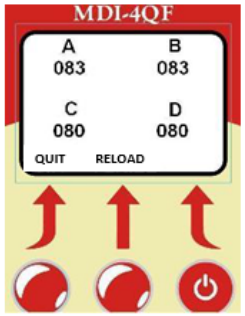

Figure 10: In this case , it is remained to the users the interpretation of results.

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FEATURES OF THE PRODUCT

FUNCTIONAL PROPERTIES:

Without clinical signs of mastitis (e.g. subclinical mastitis) you can spot the disease.

• Depending on the degree out of the normal composition of the milk, MDI 4QF mastitis analyzer indicates the degree of severity of the disease by rating.

MDI-4QF Mastitis analyser detect firstly including clinical, subclinical(which is hidden and asymptomatic) mastitis and the abnormalities which occurring in the milk that allows you to take the necessary measures. It is a tool that gives you useful information.

1. Thanks to the wide screen of device, you can see the results of four teats simultaneously.
2. In general, the use of device in normal mode shows the values outside the normal range (eg, colostrum, .) in Milk, so you can get the idea without any additional effort on disease easily and it allows you to start treatment timely.
3. With automatic test modeof device you can see the difference between the milk of four teats.
4. Mastitis analyzer provides with automatic interpretation mode without any special knowledge or skill gives an idea about the disease to breeders and veterinarians before mastitis damaging the udder and provide the early initiation of the treatment.
5. Disinfectants, water and shatter resistant body facilitates compliance with the rules of cleaning during transition from an animal to animal. The absence of sharp edges of mastitis analyzer prevents the accumulation of residue and allows easy cleaning.
6. You can clear the four compartment of mastitis device easily only with clear water during the transition from animal to animal. (From Piset flushing water is sufficient.)

MDI 4QF MASTITIS ANALYZER;

1.Without clinical signs of mastitis (subclinical mastitis) you can spot the disease.
2.Depending on the degree out of the normal composition of the milk, MDI 4QF mastitis analyzer indicates the degree of severity of the disease by rating.
3.You can take reliable results in about 10 seconds.
4. It can be used by everyone and it makes possible to minimize the amount of losses that could occur due to mastitis.
5.No operating costs. It only works with 2x9 V battery.
6.Durable, robust, reliable and practical.
7. It keep your prestige, your credibility and increase your profits.

TECHNICAL SPECIFICATIONS

Weight: 300 g (about).
Measuring time:. 12 sec (about)
Measurement technics: Electrical conductivity
Power supply: 2 x 9V battery 9V6LR61.
Estimated battery life: with the request to turn off when it is not in use
3 months. (Daily 10 measurements approximate)

RULES FOR THE USER TO COMPLY WITH MEASUREMENTS

1. Before the first use ; the probes of the device in measurement compartements must be washed with hot water, liquid soap and with a brush. İt is very important to clean the protective oil on the probe during manufacture. If you do not clean the device you can't take the true results.
2. Before starting the measurement and after each measurement wash compartement of device with water.
3. After checking of all animals to remove the frozen milk fat on the probes use hot water, brush and liquid soap. İf you forget to do cleaning process at the end of measurement , in this case before the start of the new measurement clean the device again. (After adjust the Auto test mode and filling all compartement with any feature of water in the same amount press the Control button of device. İf you don't see "000"value for the all compartements then clear the tips of the probes. Repeat the test after cleaning of the probetips.) Then add a little salt to one of the measurements compartement and mix it. If the value in the salt added compartment different from other compartements then your device is operating normally. If you do this experiment in AUTO mode in that case, device shows in all salt added compartement +7 PATIENT. Because your vehicle is constructed to detect much smaller values that you add to for measurement.
4. Do not immerse all your tool in the water in any way!. Especially don't immerse the on-off button in the water under no circumstances. Nevertheless ,there is in the all annexes of the instruments silicone gasket,because of this feature the instrument is waterproof. Especially protect the on-off botton from the water.
5. Do not drop it, keep it clean, use with pleasure.

INFORMATION AND ATTENTION TO BE CONSIDERED DURING USING OF DEVICE

1. Read this user manual carefully, then keep for future reference.
2. Be careful to replace both batteries when changing the batteries. Make sure you use alkaline batteries.
3. Before and after using the product don,t forget to wash with hot water, soap and brush. Don't do this process in every test, do it when you give more than 1 hour breaktime between the tests.
4. When you don't use the toll, dry and store it in the box.
5. Please pay attention to which udder you milking which chamber of device. To Milk each udder to each compartement under the every udder. During evaluation hold the device how you approached to the animal.
6. Kept animals constant during the measurement. Despite this, don't drop device during excessive and unexpected mobility.
7. Please fill the same amount of milk in all compartıments and don,t mix to each other. Please fill the milk in the device at least half of all compartements. Failure of this case may cause wrong results.
8. Don't immerse all device into water. Especially don't immerse on-off button into water. Make sure it's clean and conductive the measurement probe of device. it is good from time to time to clean with hot water ,soap and brush
9. Carry in its bag.
10. **IMPORTANT:** İt is sent you with full batteries. After using absolutely close it from side power switch. If you forget to close ,the battery ends 24 hours.

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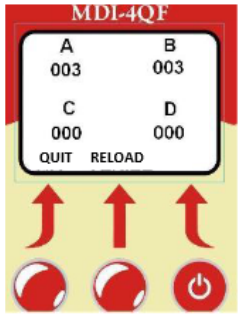

Figure 8: This screen shows "C" and "D" as the smallest samples(it is considered normal) and "A" and "B"samples shows from them "3" time more value from them. That means the value goes beyond normal. Detailed descriptions can be found under the heading of "Operating principle in the Use guide.

If you exit the menu firstly AUTO INTERPRETATION and then "AUTO TEST" and brought to the closed position before starting the measurement , in this case results of the sample measurement directly displayed numerically as in the following example.

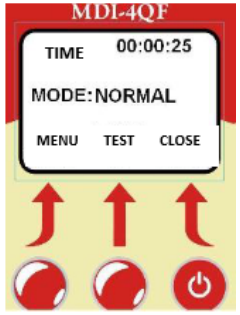

Figure 9: If it was opened in normal mode and pressed the "TEST" buton,
After you see ANALYSIS DONE" on the screenthe results are showed as below.

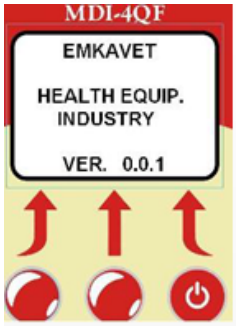

Figure 7: For exit this screen and reach the normal test screenpress the button to the left.

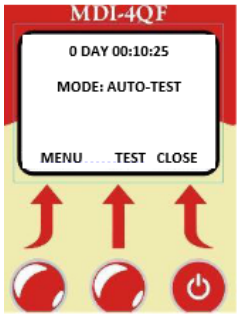

Figure 8: When this screen appears measurements will be made AUTO-TEST modus.
If we were to do a test in this mode the following results will be appear. In this case, if any the value of the teats that gives different results subtracting the minimum value of other teats results and It is displayed as follows.

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WARNINGS ABOUT DANGEROUS AND HAZARDOUS FOR HUMANHEALTH AND ENVIRONMENT MAY BE RELATED TO THE STATUS DURING THE USE

As long as it is used in accordance with the rule there isn,t in hazardous and dangerous any situation for human health and the environmen. Used batteries should be disposed in the waste battery case.

ATTENTION ON MATTERS DURING HANDLING AND TRANSPORTATION

1. Carry the product its bag when moving from one place to another.
2. Do not forget to put the fragile items phrase on the box during transport.

INFORMATION ON USE OF ERRORS

IF the product is not working,
- Make sure the battery to full.
- Make sure wherher the cleaning of the measuring probe

IF PRODUCT DOESN'T SHOW ANY SIGNIFICANT FIGURES,

- Make sure there is full battery in device
- Check the cleanliness of the probe.
- Take the service.

IF BODY,PROBES ,SCREEN ARE BROKEN,

. Send to service to change the device.

CARE AND REPAIR

Our authorized service makes the technical care. İt is given list of authorized service and parts supply in the guarantee document.

CARE AND CLEANING THAT YOU CAN DO YOUR OWN

Light cleaning: Wash off with clear water and disenfectant between the measurements
Normal cleaning: When you break the measurement clean the sample
chambers, with hot water, liquid soap and swab and rinse it.
Note: Do not immerse in any fluid your device. Just wipe handle portion, never wash with water and disenfectant.

WORKING PRINCIPLE

DESCRIPTION:

It is handheld the milk control device and it is intended to be used in cows. It measures the electrical conductivity of the milk from each udder and ıt determines mastitis in this way.

The changing in the structure of the Milk plasma (that is consisting of ions such as Na, Cl etc and has certain liquid electrolyte structure) occur during udder tissue inflammation and other diseases .In such cases take place increase in the chloride , sodium ions and electrical conductivity of milk increases or decrease in potassium and lactose.

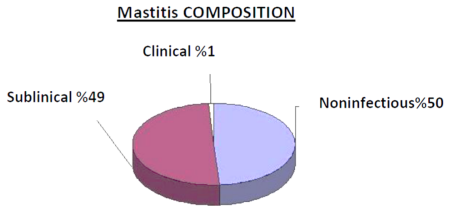
The operation of the device depends on this principle and the abnormalities in cow's milk could be found by the measuring of milk permeability quickly and accurately.

Thanks to this feature of this device does not cause false positive results as other test as CMT, etc. This tests could given still high somatic cell count in milk even though the animals were treated and returned to its normal structure .

It is useful to determine the milk that after antibiotic treatment has returned to its normal composition. Udder with mastitis still have some time high somatic cells although the animals have responded to antibiotic treatment and had been treated and therefore it is not possible using methods such as CMT test etc. whether the treatment is successful or not.

The most accurate method is to determine whether the treatment is successful, to send milk after taking under sterile conditions to the microbiological cultivation or by use of MDI 4QF Full Milk Checker can be determined whether the milk has returned to normal composition or not(even by the comparing four udder).

Especially in some cases four teats have not got mastitis at the same time (The ratio of mastitis at the same time in four teats is less than 20%). İn this cases, the teat with mastitis does not show the same values with other teats therefore it is extremely easy and reliable with MDI 4QF to determine abnormal milk.



Naturally general mastitis cases almost out of the normal composition of milk accounted for about 50% (they are considered as non-infectious mastitis) and MDI 4QF is an excellent method to detect this cases.

Changes in the structure of healthy milk degree characterized by increase in the level of sodium and chlorine and decrease in the level of potassium and lactose.

Because of the degree of inflammation or other negative reasons osmotic pressure compensation (and ions in milk), which should be in spite of everything, can not be maintained at a significant rate. Milk analyzers can accurately detect mastitis with the evaluation of these factors and can prove milk with abnormal quality.

NOTE: Although the permeability level that based on the difference between the four udder depending on the changing at the degree of inflammation, absolute permeability level changes also in the performed diagnostic methods depends on some factors such as changes in systemic diseases and estrus ,changing in ration .

But in each case the difference between the udder measurements , that arise only in the event of inflammation ,the device make extremely reliable comments.

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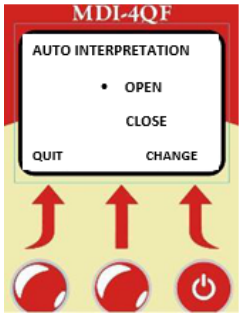

Figure 5: If the above screen is shown and if you want to close "AUTO INTERPRETATION" nodus then pres buton under the "CHANGE" and AUTO-INTERPRETATION modus will be closed . By saving this state and to exit by pressing the button the "Exit" (Exit). By the pressing the EXIT buton after the settings of the automatic interpretation modus and then appears the next menu "AUTO TEST".

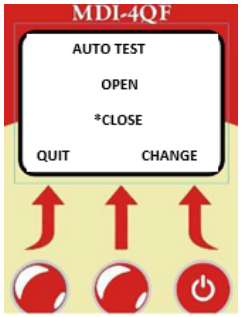

Figure 6: "AUTO TEST" menu without interpretation, the smallest digital value accepted als basis and this is considered"0" (zero) menu. İf you want to use "AUTO TEST" by pressing the button below the "CHANGE"and then you can open the AUTOMATİC TEST modus and if you want to save and exit pres the buton under the "EXIT" buton. In this case, the following screen will appear showing the information version of Tool.

Following this screen;

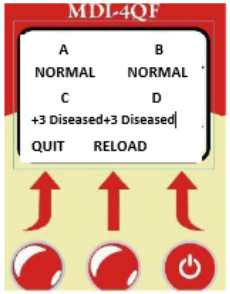

Figure 3: The results are automatically displayed on the screen when the results interpreted and teat with illness displayed on the screen directly and It is given by specifying the degree of illness.

If the users want to see differences between udders and want to decide hisself then modes of device must be changed and the must be used.

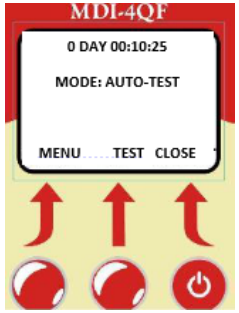

Figure 4: After the above opening screen appears then press the "MENU" buton which is on the bottom of the article.

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In the beginning for abnormal milk 4 breast lobes

The ratio of permeability values ratio and permeability values between the four udder lobes as follows.

Measured values	Differences between the udder	Evaluation
<80	<1	Regular milk
<80	>2	İnfected milk
>80	<2	Infected milk (low density milk abnormal physiological that including colostrum etc)
>80	<2	Low density and abnormal physiological that including colostrum etc.

Measurement of in the table valid for milk in normal temperature. Do not analyzed in the cold milk. Because ionization is low in cold milk.

GUARANTEE CONDITIONS and PRODUCTS LIFETIME

GUARANTEE CONDITIONS:

1. The warranty period starts from the date of delivery and 2 years.
2. İncluding all parts of device is covered by our company guarantee,
3. The repair time is added to the warranty period in case of any failure of device in the warranty period. The repair time is up to 30 business days. This period starts from the date of notification about the fault of device to the service station , in case of the lack of service stations to the goods dealer, reseller, agent, representative, exporter or manufacturer.
4. Within the guarantee period, in case of malfunction due to errors in material and workmanship, as well as assembly, workmanship costs,and fee about the replacement of any part of device part or fault under any name will be repaired without any charge from our company.
5. İf any breakdown of device emergence subject to a year within the warranty period from the date of delivery because of same fault repetition and more than two or four different defect and if inability to utilizing the product win continuity,
   - Exceeding the maximum time required for the repair,
   - Report will be required in case of the repair of detect impossible. The report will be held one of vendors, dealers, agencies,representative, exporter or producer in the absence of the service station. İn this case it will be made free replacement of device.
6. Repair of device out of warranty in case of failure to comply with the instruction manual of the device.
7. For problems that may arise in connection with the warranty certificate apply General Directorate of Consumer and Competition Protection of İndustry and Commerce Ministry.
8. The warranty of the product covers failures resulting from production errors as follows:

   a. If the warranty of device expired
   b. İf outside the service were intervened or attempted the repair or open of product.
   c. The warranty are excluded from the service with assessment report in case of out of order of device because of Shock, forcing and breakage, fragmentation of device that resulting because of dropping, non-compliance with consumer rules for periodic cleaning and maintenance.

PRODUCT LIFETIME

Product lifetime is 6 years and it is covered by the warranty for two years and remaining four year is not under warranty but the company makes parts support.

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MDI-4QF Menu Descriptions

It opens with a button unit on the side of the tool. Then, the device adjusted as described in menu below :

It opens in AUTO.TEST mode for an easy using of device. Thus, analysis of the results interpretation is not required from the user's. Results were displayed as direct comments for example, shown as +3 PATIENTS.

If Veterinarians see the results numerically and if they want to interpret themselves, AUTOTEST and AUTO INTERPRETATION.
They are required to set off the menu AUTO TEST and AUTO INTERPRETATION. In this case the device switches to the normal mode and shows the results numerical .

You can observe below the device's menu and descriptions.

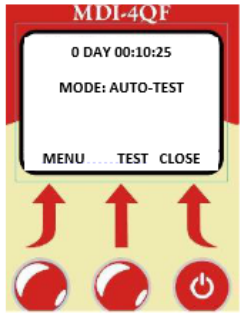

Fig 1: Opening the opening button on the side of the device the above screen is displayed on the screen.

If the instrument is made of milk samples intake " for starting the analysis provided by pressing the button DO TEST buton at the bottom of the article.

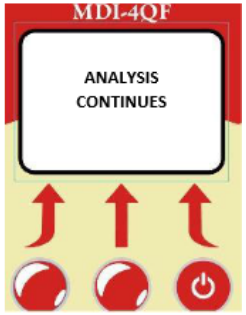

Figure 2: The above screen appears when the analysis began and required applications run by the machine. No button does not work when displaying this screen.